

Remarks/Arguments:

Claims 1-3, 8-13, 27-29 and 34-39 are pending. Claims 4-7, 14-26, 30-33 and 40 have been cancelled.

Claims 1-3, 8-9, 27-29 and 34-35 have been rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Andrieu et al. in view of Holland et al., and Andrews et al. Claims 10-12 and 36-38 are further rejected under 35 U.S.C. 103(a) as being unpatentable over Andrieu et al. in view of Holland et al. and Andrews et al. and further in view of Kite, III et al. Claims 13 and 39 are further rejected under 35 U.S.C. 103(a) as being unpatentable over Andrieu et al. in view of Holland et al. in view of Andrews et al., and further in view of Holt et al.

Independent claims 1 and 27, the only independent claims in the case, have been amended to recite that the long chain polyethylene fibers used in the fabric have a tenacity equal to or greater than 20 grams/denier. Both claims have further been amended, as suggested by the Examiner, to now include the recitation “the fabric is formed of an elongated fabric sheet consisting of a woven, single layer, lightweight fabric with a thermoplastic film bonded to least one side thereof.”

Applicant appreciates the courtesies extended to Applicant’s counsel during the recent office interview on October 23, 2008. The substance of the interview is accurately reported in the Examiner’s communication dated October 29, 2008; however it should be noted that subsequent to the Interview Report, Applicant has been notified that the tentative agreement reached has been revoked by the Examiner.

By way of overview, Applicant and Examiner, in their discussion, reviewed the guidelines recently established by the Commissioner. In this regard, Applicant and Applicant’s attorney and Examiner discussed:

- who the person of ordinary skill in the art is;
- what does the prior art teach him;
- what does the prior art not teach him; and

is the result of the combination of references predictable.

First, the person of ordinary skill in the art (POSA) is one concerned with the design and construction of ropes, cables, hoses, lines, tethers and lanyards (up to 4-6 inches in diameter) for airports, docks, construction sites, and the like. The POSA will be aware of the uses to which these lengths of material are used, the weights of the various lengths of material, and that they are very expensive (\$100 per foot or more). He would also have been the one using the same cables, hoses, ropes, etc. for years, and either simply replacing known types of protective covers very often because of their ineffectiveness or perhaps even worse, replacing cables, ropes, etc. as they wore out. He would also be aware known protective covers cost \$9-\$10 per foot.

The Invention

Applicant, however, was the first to identify a source of the problem causing such covers to wear out. That problem was that the covers were made of an ineffective material. In certain industries, such as airline, shipping, and construction large cables (such as mooring lines), fuel hoses, and electrical cables must be pulled and dragged repeatedly (several times a day) across abrasive surfaces such as concrete and asphalt. These cables (often 100 or 200 feet in length), are extremely expensive (up to \$100/ft.). In addition, these surfaces may be wet or have gasoline or other stronger chemicals thereon. As a result of this harsh environment and surface conditions, such cables or hoses must be replaced frequently, which is a very expensive undertaking. It has been known to use covers made of canvas, leather, nylon, however such materials were not satisfactory and therefore of not much use. The inventors here determined the reason was because such covers were both heavy and quickly deteriorated; not only because they did not resist abrasion, but also because they were not resistant to moisture from water, gasoline, chemicals, and were not resistant to UV. Also, when the covers were loosely attached in such a manner as to let the cables move therewithin, considerable heat was generated from the friction, which accelerated deterioration.

The inventor's solution is to utilize a different fiber for the yarn used to make the material that, even though it is about twice as expensive, results in a product that was about 1/3 the weight and lasts 4-5 times as long. It is also far more abrasive resistant and use of the EVA film reduces friction between the cover and the cable or hose thereunder.

What the Prior Art Does Not Teach

The Andrieu et al. patent, No. 5,300,337, generally provides a protective cover for wires and hoses. However, the Andrieu et al. type cover is much smaller and for the type of wires and hoses that exist in engine compartments to protect the wire and hose from fans, moving pieces of equipment and the like. Contrary to the Examiner's statement on page 3 of the final rejection, the cover of Andrieu et al. would not be capable or effective for use in environments such as airports, docks, and construction sites. It is not of the abrasion and chemical resistant material claimed in the instant invention. Indeed, it would be no better than the admitted prior art. The POSA would also know that there had been attempts to protect the types of cables, ropes and the like referred to in the application with such materials as old canvas fire hoses, leather, and even strong nylon (Cordura), and the cover of Andrieu et al. is very similar to these covers. The POSA would know that these covers provide extremely minimal protection from abrasion and chemicals. The POSA would also be aware that these types of cables and ropes are very expensive and can cost \$100 per foot or more. Thus, a two hundred foot cable can cost \$20,000. The POSA would also know that covers of material like Andrieu et al. or Cordura cost about \$9 to \$10 per foot, and will provide some degree of protection, and are generally not worth the expense.

The second reference, *i.e.* the Holland et al. patent, No. 5,395,682, is illustrative of light-weight, stab-resistant, puncture-resistant protective fabrics formed of high molecular weight polyethylene which are used for a different purpose, *i.e.* as the end walls of cargo containers, because the material is so strong (high tensile strength). The POSA, by reading the Holland et al. patent, would become aware that this high molecular weight polyethylene fabric has some abrasion resistance; however, the abrasion resistance realized by end covers for cargo containers is nothing like the abrasion realized by cables dragged across the surfaces of the type envisioned

by the present application. Those surfaces, in addition to being formed of abrasive materials like concrete, are often covered with water and/or chemicals that attack the polymer. Kevlar, for example, is strong, but cannot resist chemicals. Very importantly, the POSA would also be aware the type of cover described in the Holland et al. patent, formed of the high molecular weight polyethylene, would be double the cost of the covers of which he was aware, or about \$20 per running foot. Knowing what he knew then, the POSA would not be inclined to spend double the cost for protective covers, that he was not aware would provide better protection.

The third patent relied upon by the Examiner, the Andrews et al. patent, No. 5,965,223, would not provide the POSA with much additional information. The POSA would learn from the Andrews et al. patent that there is a very heavy fabric formed of two or three layers or plies of knit fabric that is available, primarily to protect workers working with knives, saws, and the like. By adding the deniers of the inner and outer primary layers, it is at least 5+ times as heavy as claimed. The '223 patent states that these fabrics are useful to make aprons, gloves, and arm guards. One layer is abrasive itself in order to dull knives, and toward this end is actually formed of a bi-component yarn comprising wire covered with some kind of polymeric covering. The second layer is cut-resistant. While the Andrews et al. reference mentions that this fabric can be used as a jacketing for tubing, hose and wire, it appears that this type of jacketing may be something entirely different (such as the hose wall itself), and the reference is not clear what is meant in this regard. In any event, the Andrews et al. fabric would be very, very heavy, and a POSA wouldn't think twice about using it in the claimed environment. The Examiner is correct that there is a layer of melt fusible thermoplastic material which can be knitted into the fabric as a third yarn, then melt fused. But the Andrews et al. reference is not clear what purpose the melt fusible thermoplastic material serves. Andrews et al. also mentions that the fabric can be woven, but does not explain how the third, melt fusible yarn layer could even be formed in such a fabric. It would not be clear that it could even be applicable to a woven fabric.

The Law Requires That Combinations Be Predictable, Not Used In Hindsight

The guidelines for the analysis of the obviousness question begin with 35 U.S.C. § 103, which states that a patent claim is obvious, and thus invalid, when the differences between the claimed subject matter and prior art “are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.” The obviousness analysis is based on several underlying issues of facts, namely: (1) the scope and content of the prior art; (2) the level and skill of a person of ordinary skill in the art; (3) differences between the claimed invention and the teachings of the prior art; and (4) the extent of any objective indicia of nonobviousness. Graham v. John Deere Company, 383 U.S. 1, 17-18, 86 S.Ct. 684, 15 L.Ed. 2d 545 (1966).

When obviousness is based on the teaching of multiple prior art references, the movant (Examiner) must also establish some reason, referred to as a suggestion, teaching, or motivation (TSM) that would have led a person of ordinary skill in the art to combine the relevant prior art teachings in the manner claimed. Tech Air, Inc. v. Denso Manufacturing Mfg. Mich. Inc., 192 F.3d 1353, 1359-1360 (Fed. Cir. 1999). While the recent Supreme Court decision of KSR International Co. v. Teleflex Inc. et al., 127 S. Ct. 1727, 550 U.S. ____ (2007) has held that this motivation does not necessarily have to be explicit in the cited prior reference itself, it still must be established by the movant (Examiner).

This reason or suggestion for motivation to combine prior art references may be found either explicitly or implicitly: (1) in the prior art references themselves; (2) in the knowledge of those of ordinary skill in the art that certain references, or disclosures in those references, are of special interest or importance in the field; or (3) from the nature of the problem to be solved, leading inventors to look to references relating to possible solutions to that problem. Rulz v. AB Chance Co., 234 F3d 654, 655 (Fed. Cir. 2000). Both the Federal Circuit and the Supreme Court consistently warn that the proper analysis of obviousness should avoid hindsight basis. See Graham.

The temptation to engage in hindsight is especially strong with seemingly simple mechanical inventions. This is because combining prior art references without establishing such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability/the essence of hindsight. In re Dembiczak, 175 F.3d 998, 999 (Fed. Cir. 1999). Therefore, the CAFC has consistently held that a person of ordinary skill in the art must not only have had some motivation to combine the prior art teachings, but some motivation to combine the prior art teachings in the particular manner claimed. In re Kotzab, 217 F.3d 1365, 1371 (Fed. Cir. 2000). In other words, the Examiner has the burden to show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the matter claimed. In re Rouffet, 149 F.3d 1350, 1357 (Fed. Cir. 1998).

In the recent United States Supreme Court case of KSR International Company v. Teleflex, Inc., et al., 127 S.Ct. 1727 (207) the Supreme Court reaffirmed the familiar framework for determining obviousness as set forth in Graham v. John Deere Company, 383 U.S.1 (1966). Further, in KSR, supra, it is true the Supreme Court particularly emphasized the need for caution in granting a patent based on a combination of elements which elements could be found in the prior art. However, the Supreme Court cautioned against hindsight bias and ex post reasoning. The KSR decision has resulted in the issuance of a set of guidelines for determining questions of obviousness. See Examination Guidelines for Determining Obviousness under 35 U.S.C. § 103 in view of the Supreme Court decision in KSR, International Co. v. Teleflex, Inc., Federal Register/VOLUME 72, pages 57526-57535.

In many cases, the solution to a problem, once known, may be obvious but the recognition of the problem itself or of the source of the problem is not obvious. This premise was stated in the historic case of Eible Process Company v. The Minnesota & Ontario Paper Co., 261 U.S. 45 (1923). In Eible, the Supreme Court established the rule that the discovery of the source of the problem may result in a patentable invention despite the fact that the solution would have been obvious, once the source of the problem was discovered. Thus, when an examiner applies prior art by modifying or combining a reference, the examiner and the

practitioner must evaluate what is the patentable discovery made by the applicant, i.e., the discovery of the problem itself, the discovery of the source of the problem, or merely the solution to that problem. With such an understanding the Examiner must then explain how the prior art makes this discovery obvious. In the present case, it is the recognition of the problem itself, not necessarily the solution that forms the basis for the invention. The Eible concept has been followed in In re Sponnoble, 405 F.2d 578, 160 USPQ 237 (CCPA 1969) and in In re Peehs, 612 F.2d 1287, 204 USPQ 835 (CCPA 1980).

Recently, the Patent Office Board of Appeals and Interferences has pointed out that the Supreme Court made it very clear in KSR that an invention “composed of several elements is not proved obvious merely by demonstrating that each of its elements was independently known in the art.” Ex Parte Jonathan Adams and Robert W. Adams, Appeal 2008-5395, Jan. 5, 2009; Ex Parte Barry Libin, Appeal 2008-5406, Jan. 5, 2009.

The Invention Is Not Predictable

Therefore, while the POSA knows (1) protective covers for cables are known, and (2) knows that fabric made of yarns formed primarily from long chain polyethylene fibers with a tenacity of greater than 20 grams/denier is a strong material that has some abrasion resistance and has been used in fabric covers for cargo containers, and knows that such long chain polyethylene covers would cost about double of covers of nylon or polyester, a serious question arises. To wit:

Why would the POSA invest in something that cost double what he was already paying for a cable cover of polyester or canvas or nylon that he had no idea would provide better protection than the covers available?

In answer, there are two reasons why the result of the combination of references suggested by the Examiner is not predictable. First, the long chain polyethylene covers will give the POSA much more than twice the life provided by polyester or nylon at only double the cost. This is not taught by the prior art.

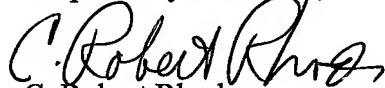
Secondly, the fabric of long chain polyethylene, in addition to having a greater abrasion resistance, provides chemical resistance and resists heat build up as a rope or cable moves within the sleeve. This also is not taught by the prior art and has simply been ignored by the Examiner.

The Examiner has not attempted to answer these questions, and merely assumes or jumps to the conclusion the POSA would look to the fabric of Holland. As a result there is no explanation of why the POSA, not being aware of or taught that such materials as illustrated by Andrieu et al do not provide satisfactory solutions for the environment of the invention, would look to the Holland et al. reference, which also has no recognition of the environment or problems existing in the environment. For this reason, the Examiner's rationale as to why the POSA would have been led to combine the prior art in the manner claimed does not meet the Guidelines and should be withdrawn.

CONCLUSION

As a result of the arguments set forth above, and the amendments to the claims as suggested by the Examiner. Claims 1-3, 8-9, 27-29, and 36-38, as now set forth, define over the prior art. As remaining Claims 10-13 and 36-39 contain the same limitations, they too define over the prior art. Thus, it appears the application is now in condition for allowance with Claims 1-3, 8-13, 27-29, and 34-39

Respectfully submitted,



C. Robert Rhodes

Registration No. 24,200

Lewis S. Rowell

Registration No. 45,469

Womble Carlyle Sandridge & Rice, PLLC

300 North Greene Street; Suite 1900

Greensboro, NC 27401

336-574-8040

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